



Desert Sky Observer

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NEWSLETTER OF THE ANTELOPE VALLEY ASTRONOMY CLUB, INC
P.O. BOX 4595, LANCASTER, CALIFORNIA 93539-4595
*The Antelope Valley Astronomy Club, Inc., is a 501(c)(3) Non-Profit Corporation.
Visit the Antelope Valley Astronomy Club website at www.avastronomyclub.org/ The
A.V.A.C. is a Sustaining Member of The Astronomical League and the International
Dark-Sky Association.*



Up-Coming Events

- April 5: First Quarter Moon
April 8: Lunar and Planetary Star Party at [Matt Leone's](#)
April 13: Full Moon
April 14: **Monthly Club Meeting***
April 20: Last Quarter Moon
April 21: Executive Board Meeting
April 22: Poppy Festival
April 23: Poppy Festival
April 27: New Moon
April 29: New Members Class
April 29: Star Party & Virtual Academy at the [Poppy Reserve](#)
May 5: [Prime Desert Woodlands](#)
May 6: Hands-On Universe

* Monthly meetings are held at the S.A.G.E. Planetarium at the Cactus School in Palmdale on the second Friday of each month. The meeting location is at the northeast corner of Avenue R and 20th Street East. Meetings start at 7 p.m. and are open to the public. Please note that food and drink are not allowed in the planetarium

Club President

Doug Drake

Dear AVAC members; did you ever wonder what you get with your membership in belonging to our outstanding astronomy club? Well, there are a lot of cool things and I would like give you an idea of what they are.

Membership

When you become a new club member you receive a new members booklet that gives you interesting information on basic astronomy, an identification club badge, voter's rights on how we proceed with our club, a member of the Astronomical League, a monthly news letter, monthly club meetings, monthly star parties, i.e. weather permitting, club picnic, club Christmas party, the enjoyment of associating with other club members, community events you can participate in, this is voluntary, and access to your club equipment and library material.

Club Meetings

Monthly Club meetings are held at the Palmdale SAGE planetarium. They start out with a business meeting and include interesting information on space exploration. Then a presentation is given by professional people from JPL, a University, space related exploration or a special club event such as "ask the experts," "Multi-station Astronomy Fair," or "YEA Club Awards." After the presentation Jeremy Amarant, our SAGE Planetarium director, turns on the planetarium, "wow," and gives us a short "what's in our night sky" show, thus ending with one of the best astronomy club meeting you can find in southern California.

Community Events

We provide astronomy outreach awareness to our Antelope Valley community and schools. The Youth Exploring Astronomy (YEA) contest for students in the 5th, 6th, 7th and 8th grades is one of our biggest outreach to our Antelope Valley youth; this will be our sixth year in presenting this program. We also provide presentations for our youths in schools, youth organizations and city functions, Lancaster and Palmdale. If you want to become a volunteer participant and have the satisfaction of helping your community you can contact our Community Director, Rose Moore.

Equipment and Library Material

Club equipment and library material can be loaned out to club members from one club meeting to the next. I have listed below only some of the equipment and library material for you.

Equipment

- **Telescope refractors:** 90mm Meade, 80mm Celestron, 76mm Sears and a 60 mm refractor
- **Telescope reflectors:** 10" f6 Dob, 10" f4.5 Dob, 10" Schmidt Newtonian LXD 55 Meade, 10" Schmidt Cassegrain LX6 Meade, 8" Dob, 6" Dob and a Celestron Nexstar 114 Newtonian
- **Eyepieces (1 ¼"):** 25mm through 10mm and a 2X Barlow
- **Eyepieces (0.96"):** 30mm through 4mm
- **Filters:** Blue, yellow, other colors and a Moon filter
- **Camera:** Pentax SP-294619
- **Camera accessories:** T rings adapters and guider w/illuminated eyepiece

Library

Books, software and videos:

- **Books:** using binoculars, using telescopes, star myths, astrophotography, observing guides and even "Astronomy for Dummies."
- **Astronomy Software:** Dynamic Sun, Sun/Earth Connections, IMAGE, Deep Space and Lunar Map Pro.
- **Videos:** Journey through the solar system in four parts.

I may have forgotten something, but as you can see, there are a lot of cool things. You also have a board of volunteer members (president, vice president, community director, secretary, and treasurer) that take care of our club's direction and help promote the good spirit that our club provides to all.

Your, Pres Doug

Vice President***Richard Hague***

At our April 14 meeting Dr. Gary L. Peterson will talk to us on the topic, "Mars, Where Did All the Water Go?" This is very appropriate since the Mars Reconnaissance Orbiter (MRO) is in the process of aero braking around Mars to circularize its' orbit and will be seeking water as one of its' primary missions. We have entered into a new age of planetary exploration and MRO is at the forefront.

Dr. Peterson has talked to us four times in the past: We explored the Martian Desert with him in January, '02; "Mercury: The Forgotten Planet" in June, '03; "The Geological Case for Life on Mars" in May, '04; and the "Collision of Comets and Planets" in January, '05. We have always found his talks to be entertaining and informative. He has numerous honors which can be found at his web-site: The Independent Planetologist, Gary L. Peterson... <http://www.rohan.sdsu.edu/~3gleep6/planets.html> Dr. Gary L. Peterson, Planetary Geologist; Ph.D., University of Washington, Seattle (1963); Professor of Geology, San Diego State University (1963 to present); Fellow: The Geological Society of America; Member: The Planetary Society

The Youth Exploring Astronomy contest this year ended on March 15. Debora Pedroza is the committee chairperson. We have essays from all over the Antelope Valley. The following club members have agreed to be the preliminary screening judges: Tom Koonce, Jeremy Amarant, Debora Pedroza, Dick Hague, Jeff Riechmann, Neil Cimo, and Steve Trotta. They have split the essays evenly among themselves and are going through them to eliminate the ones which are copied from the Internet or encyclopedia, or obviously written by someone else (an adult), etc. Some of these youngsters can write very well so we are being careful to not eliminate those. We're not necessarily looking for the brightest kids or the ones with the most technical paper. We're looking for the enthusiastic, imaginative (but not absurd) essay from a youth who shows real interest and does a reasonable job with expression.

Once the first thinning of the essays is done Debora has a list of dignitaries she has asked in the past to winnow down the essays to about 24 (top three from each grade).

Then one final person will read all 24 and choose the two best for each of the four grade levels (5, 6, 7, and 8). We hope this year to have an astronaut or someone of equal stature make these determinations.

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The Awards will be presented at our May 12 regular meeting. Dignitaries and other special people will make the presentations (there are many extra awards this year from Dryden, Xcorp, Scaled Composites, Mojave Airport, etc.). Jeremy will put on a special program and the entire meeting will be devoted to the youngsters. It's a chance for our club to demonstrate its commitment to that part of our by-laws which reference education and it will be a fun evening. Please plan to attend and show your support.

Dick Hague,

Director Community Development: Rose Moore

On the weekend of April 22nd and 23rd we will be at the Poppy Festival. We already have a number of people signed up. We can use a couple of people to set up on Friday evening and few more for Sunday.

Saturday April 29th at the Poppy Reserve is the club star party, where we will have the Virtual Academies home school kids joining us. The Virtual Academies will be at the other end of the parking lot from 7-9 PM. Please consider helping out with this event, we need a few more people! Currently it is just Doug and I for approximately 50-80 kids.

Friday May 5th is the star party at Prime Desert Woodlands for the Brownies and Girl Scouts. I will have a sign up sheet at April's club meeting. Please sign up if you are interested, we will need several people since there will be 35 for just the Brownies. I don't have a count yet from the Girl Scouts.

Upcoming events later in the year are the Painted Turtle Camp Kids, Aerospace Walk of Honor, and the Palmdale Fall Festival. We need volunteers to HELP so these events are enjoyable for everyone! Come out and make these spring events a great experience for the kids!

Rose Moore, Community Development Director

From the Editor:

Jeremy Amarant

First I would like to apologize for the newsletter being so lat. My 11 week old son was in the hospital. He is out now and doing just fine.

Thank you to the board for covering the February DSO. This allowed me to concentrate my free time on my wife and son.

We have a couple of opportunities for club members in the next month. There is a new-members class on April 29. On May 6, we will have training for Hands-On Universe. Hands-On Universe is an educational program that enables students to investigate the Universe while applying tools and concepts from science, math, and technology. Using the Internet, HOU participants around the world request observations from an automated telescope, download images from a large image archive, and analyze them with the aid of user-friendly image processing software. We will provide a copy of the software to everyone who attends. This program uses .fits images, the standard file format for CCD Cameras. If you would like to come, contact me through newsletter@avastronomyclub.org, or let me know at the next meeting. You may also make suggestions about the newsletter through this address as well.

Jeremy Amarant, Newsletter Editor

Did you know? ? ?

The total amount of energy collected by all the radio telescopes on Earth is so faint, that the energy collected by the receivers of all the radio telescopes in the world over the last 30 years would not lift a feather an inch!

? ? ?

News and Headlines

Mars has a New Visitor

The Mars Reconnaissance Orbiter (MRO), which entered orbit around Mars on March 10, is designed to search for evidence of water on or above the planet's surface.

<http://stardate.org/resources/news/mars/200606.html>

Stardate Fans Can Find Old Episodes Online

Stardate is a great resource for keeping up with current topics in Astronomy. The popular radio show has been online for years now. You can find current scripts and archives of old shows on their website.

<http://stardate.org/radio/program.php?f=today>

Dead Stars Have Pluto Size Planets

Astronomers from Penn State and Caltech have found the smallest extrasolar planet yet, orbiting a pulsar 1,500 light-years away. The small planet, the fourth discovered around this pulsar, has 1/5th the mass of Pluto.

http://www.universetoday.com/am/publish/smallest_extrasolar_planet.html

Red Dwarf Stars are the Size of Jupiter

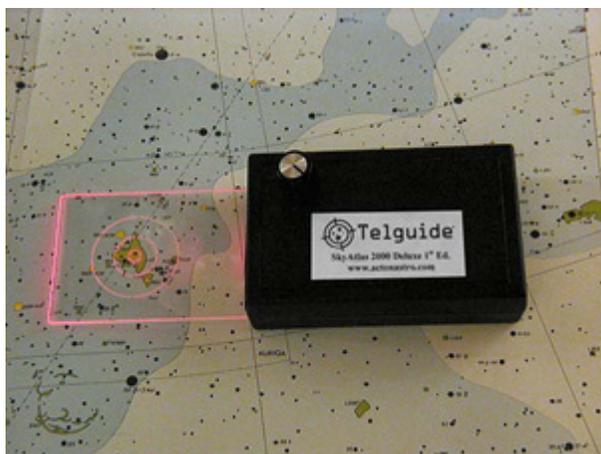
Red Dwarf Stars are the smallest of the stars and are about 1/10 the mass of the Sun. The smallest of the Red Dwarves is still about 100 times the mass of Jupiter, but about the same size.

<http://www.physorg.com/news3266.html>

Lockheed Martin to Design Aeroshell for Mars Rover

Lockheed Martin will design a blunt-nosed shield to protect NASA's 2009 Mars Science Laboratory Rover from intense heat during its entry into the Martian atmosphere. The Aeroshell is under a contract with the Jet Propulsion Laboratory; however, the contract value for the project is still in negotiations. With a diameter of 4.5 meters, the Aeroshell will be one of the largest ablative heat shields ever built.

<http://www.lockheedmartin.com/wms/findPage.do?dsp=fec&ci=17550&rsbci=0&fti=112&ti=0&sc=400>



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Planets in Strange Places

By Trudy E. Bell

Red star, blue star, big star, small star—planets may form around virtually any type or size of star throughout the universe, not just around mid-sized middle-aged yellow stars like the Sun. That's the surprising implication of two recent discoveries from the 0.85-meter-diameter Spitzer Space Telescope, which is exploring the universe from orbit at infrared (heat) wavelengths blocked by the Earth's atmosphere.

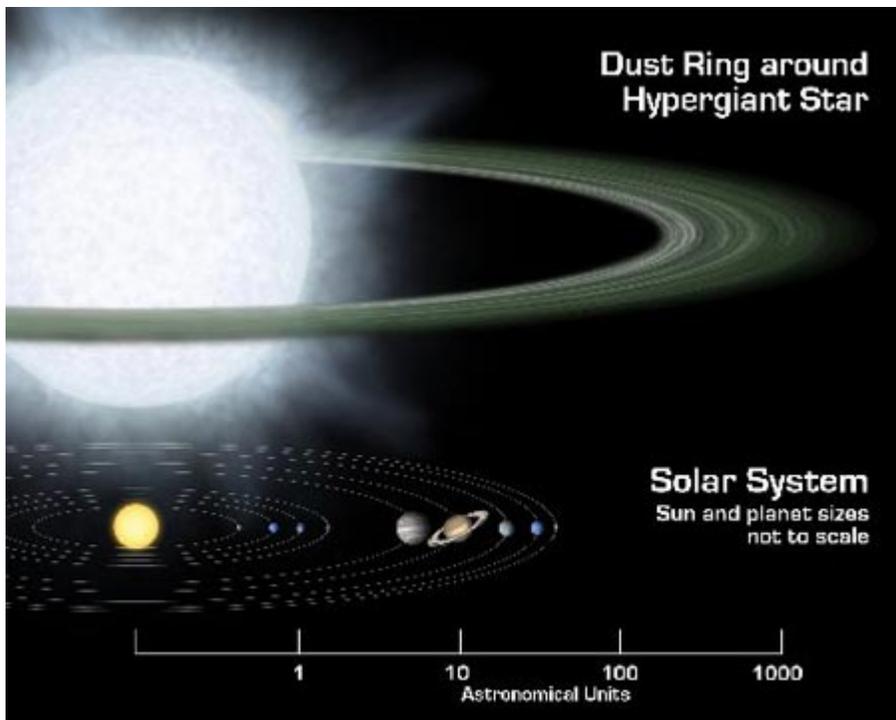
At one extreme are two blazing, blue "hypergiant" stars 180,000 light-years away in the Large Magellanic Cloud, one of the two companion galaxies to our Milky Way. The stars, called R 66 and R 126, are respectively 30 and 70 times the mass of the Sun, "about as massive as stars can get," said Joel Kastner, professor of imaging science at the Rochester Institute of Technology in New York. R 126 is so luminous that if it were placed 10 parsecs (32.6 light-years) away—a distance at which the Sun would be one of the dimmest stars visible in the sky—the hypergiant would be as bright as the full moon, "definitely a daytime object," Kastner remarked.

Such hot stars have fierce solar winds, so Kastner and his team are mystified why any dust in the neighborhood hasn't long since been blown away. But there it is: an unmistakable spectral signature that both hypergiants are surrounded by mammoth disks of what might be planet-forming dust and even sand.

At the other extreme is a tiny brown dwarf star called Cha 110913-773444, relatively nearby (500 light-years) in the Milky Way. One of the smallest brown dwarfs known, it has less than 1 percent the mass of the Sun. It's not even massive enough to kindle thermonuclear reactions for fusing hydrogen into helium. Yet this miniature "failed star," as brown dwarfs are often called, is also surrounded by a flat disk of dust that may eventually clump into planets. (Note: This brown dwarf discovery was made by a group led by Kevin Luhman of Pennsylvania State University.)

Although actual planets have not been detected (in part because of the stars' great distances), the spectra of the hypergiants show that their dust is composed of forsterite, olivine, aromatic hydrocarbons, and other geological substances found on Earth.

These newfound disks represent "extremes of the environments in which planets might form," Kastner said. "Not what you'd expect if you think our solar system is the rule." Hypergiants and dwarfs? The Milky Way could be crowded with worlds circling every kind of star imaginable—very strange, indeed.



Keep up with the latest findings from the Spitzer at www.spitzer.caltech.edu/. For kids, the Infrared Photo Album at The Space Place (spaceplace.nasa.gov/en/kids/sirtf1/sirtf_aktion.shtml) introduces the electromagnetic spectrum and compares the appearance of common scenes in visible versus infrared light.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Artist's rendering compares size of a hypothetical hypergiant star and its surrounding dusty disk to that of our solar system.



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A.V.A.C. Membership Information

Membership in the Antelope Valley Astronomy Club is open to any individual.

The Club has three categories of membership.

- Family membership at \$30.00 per year.
- Individual membership at \$25.00 per year.
- Junior membership at \$15.00 per year.

Membership entitles you to...

- Desert Sky Observer—monthly newsletter.
- The Reflector—the quarterly publication of the Astronomical League.
- The A.V.A.C. Membership Manual.
- To borrow club telescopes, binoculars, camera, books, videos and other items.

The Desert Sky Observer is available as a separate publication to individuals at a cost of \$10.00 per year. Subscription to the Desert Sky Observer does not entitle the subscriber to membership in the Antelope Valley Astronomy Club and its associated privileges.

Astronomy Links on the Web

<http://www.darksky.org/>

(International Dark-Sky Association)

<http://www.astro-tom.com/>

(Tom Koonce's website)

<http://www.noexitrecords.com/zerobox/astro.htm>

(Tom Varden's website)

<http://www.astropaws.com>

(Terry Babineaux's astrophotos)

<http://www.actonastro.com/>

(Steve Trotta's website)

<http://saturn.jpl.nasa.gov/multimedia/images/latest/index.cfm>

(the latest Saturn pics from Cassini)

<http://astronomy-mall.com/>

(shop 'til you go broke)